

10th Hellenic Conference on Artificial Intelligence

SETN 2018

Conference Programme

9-12 July 2018

University of Patras, Rio Campus, GR

10 SETN2018

9-12 JULY 2018

**10th HELLENIC CONFERENCE ON
ARTIFICIAL INTELLIGENCE**



Organiser

The conference is organized by

- the University of Patras, GR
- Hellenic Artificial Intelligence Society (EETN)

Committees

General Chairs

Nikos Fakotakis, Professor, University of Patras

Vasileios Megalooikonomou, Professor, University of Patras

General Co-Chair

Vassilis Plagianakos, Associate Professor, University of Thessaly, Greece (EETN Chairperson)

Program Committee Chairs

Ioannis Hatzilygeroudis, Professor, University of Patras, Greece

Christos Makris, Associate Professor, University of Patras, Greece

Organising Committee

Nikos Fakotakis, Professor, University of Patras

Vasileios Megalooikonomou, Professor, University of Patras

Ioannis Hatzilygeroudis, Professor, University of Patras

Christos Makris, Associate Professor, University of Patras

Konstantinos Moustakas, Associate Professor, University of Patras

Kyriakos Sgarbas, Associate Professor, University of Patras

Media Chair

Nikos Fakotakis, Professor, University of Patras, Greece

Workshop Chair

Christos Makris, Associate Professor, University of Patras, Greece

Tutorials Chair

Kyriakos Sgarbas, Associate Professor, University of Patras, Greece

Invited Talks

[Invited Talk 1: A Holistic Approach to Automatic Deep Understanding of Technical Documents](#)
by Dr. Nikolaos Bourbakis, IEEE Fellow Director, CART-WSU, BAIF

[Invited Talk 2: Graph degeneracy and applications to social networks and text mining](#)
by Michalis Vazirgiannis, Professor at LIX, Ecole Polytechnique in France

[Invited Talk 3: Deep learning for collaborative control of mobile robots for area coverage](#)
by Anthony Tzes, Professor at NYU in Abu Dhabi

Special Sessions Committees

[Special Session 1: Natural Language Processing for Social Media Analysis](#)

Iosif Mporas, University of Hertfordshire, UK
Vasiliki Simaki, Lancaster University, UK
Carita Paradis, Lund University, Sweden
Andreas Kerren, Linnaeus University, Sweden
Michael Paraskevas, CTI Diophantus, Greece

[Special Session 2: Intelligent Biomedical Systems and Applications](#)

Konstantinos Moustakas, Associate Professor, University of Patras
Vasileios Megalooikonomou, Professor, University of Patras
Christos Makris, Associate Professor, University of Patras

[Special Session 3: Special Session on Quantum Artificial Intelligence \(QAI\)](#)

Kyriakos Sgarbas, University of Patras, Greece
Nikos Konofaos, Aristotle University of Thessaloniki, Greece
Ioannis Karafyllidis, Democritus University of Thrace, Greece

Tutorial

[Title: Deep Learning for Computational Biology](#)
Tutor, Thrasyvoulos Karydis, MIT Media Lab

Contest

[Title: Contest in Robotics](#)

Kavallieratou Ergina, University of the Aegean
Dimitris Chatzis, University of the Aegean
Balafoutis Athanasios, University of the Aegean
Ioanna Bakali, University of the Aegean
Anestis Vovos, University of Patras

Programme Committee (PC)

- Dimitris Achlioptas, Dept. of Computer Science, Univ. of California Santa Cruz
- Anastasia Ailamaki, Dept. of Computer and Communication Sciences, EPFL
- Petros Drineas, Associate Professor, Dept. of Computer Science, Purdue University
- Costas Iliopoulos, Professor, King's College London
- Panos Ipeirotis, Associate Professor, Leonard N. Stern School of Business, New York University
- Prof. Myra Spiliopoulou, Fakultät für Informatik (FIN)
- Ioannis Tsamardinos, Computer Science Department, University of Crete
- Vassilios Verykios, Hellenic Open University
- Phivos Mylonas, National Technical University of Athens
- Stasinios Konstantopoulos, NCSR Demokritos
- Efstratios Kontopoulos, Information Technologies Institute, Centre for Research & Technology
- Nick Bassiliades, Aristotle University of Thessaloniki
- Antonis Bikakis, University College London
- Fotios Kokkoras, TEI of Thessaly
- Michael Sioutis, University of Artois
- Ergina Kavallieratou, University of the Aegean
- Ioannis Katakis, University of Athens
- Konstantinos, Blekas University of Ioannina
- Kostas Stefanidis, University of Tampere
- Pavlos Peppas, University of Technology Sydney
- Grigorios Tsoumakas, Aristotle University of Thessaloniki
- Christos-Nikolaos Anagnostopoulos, University of the Aegean
- Manolis Maragoudakis, University of the Aegean
- Dimitris Kalles, Hellenic Open University
- Anastasios Tefas, Aristotle University of Thessaloniki
- Stefanos Kollias, National Technical University
- Giorgos Flouris, FORTH-ICS
- Iosif Mporas, University of Hertfordshire
- Basilis Gatos, Institute of Informatics and Telecommunications, NCSR Demokritos
- Michalis Titsias, AUEB
- Camelia Pinteá, Technical University of Cluj-Napoca, North University Center at Baia Mare
- Grigoris Antoniou, University of Huddersfield
- Vangelis Karkaletsis, NCSR Demokritos
- Manolis Koubarakis, National and Kapodistrian University of Athens
- Todor Ganchev, Technical University of Varna
- Konstantinos Parsopoulos, University of Ioannina
- Dimitris Vrakas, Aristotle University of Thessaloniki
- Isidoros Perikos, University of Patras, Department of Computer Engineering & Informatics
- Dimitris Iakovidis, Technological Educational Institute of Lamia
- Ioannis Partalas, Expedia LPS
- Nikos Fazakis, University of Patras
- Efstathios Stamatatos, University of the Aegean
- George Magoulas, Birkbeck College
- Ion Androutsopoulos, Athens University of Economics and Business (AUEB)
- Sotiris Batsakis, University of Huddersfield
- Spiros Likothanassis, University of Patras
- Georgios Paliouras, Institute of Informatics & Telecommunications, NCSR Demokritos
- Antonios Gasteratos, Democritus University of Thrace
- Ilias Maglogiannis, University of Piraeus
- George Tsihrintzis, University of Piraeus

- Jim Prentzas, Democritus University of Thrace
- Dimitrios Vogiatzis, NCSR Demokritos
- Ioannis Vlahavas, Aristotle University of Thessaloniki
- Foteini Grivokostopoulou, University of Patras
- Andreas Symeonidis, Aristotle University of Thessaloniki
- Christophoros Nikou, University of Ioannina
- Aristidis Likas, University of Ioannina
- Christos Papatheodorou, Dept. of Archives and Library Science, Ionian University, Corfu, Greece
- Petros Stefaneas, National Technical University of Athens
- Kostas Stergiou, University of Western Macedonia
- Elpida Keravnou-Papailiou, Professor of Computer Science
- Dimitris Plexousakis, Institute of Computer Science, FORTH
- George Vouros, University of Piraeus
- Georgios Dounias, Associate Professor, University of the Aegean
- Georgios Chalkiadakis, Technical University of Crete
- Vassilis Plagianakos, University of Thessaly
- Sotiris Kotsiantis, University of Patras
- Athanasios Tsadiras, Aristotle University of Thessaloniki
- Vasile Palade, Coventry University
- Manolis Gergatsoulis, Associate Professor, Department of Archive and Library Sciences
- Spyros Vosinakis, University of the Aegean, Dept. of Product and Systems Design Engineering
- Ioannis Refanidis, University of Macedonia, Dept. of Applied Informatics
- Nikos Nikolaidis, Aristotle University of Thessaloniki
- Nikos Aspragathos, University of Patras
- Antonis Kakas, University of Cyprus ordinary
- Antonios Tzes, Abu Dabi New York University
- Plamen Angelov, Lancaster University

Conference at a glance

Monday, July, 9th	
8:00-9:00	Registration
9:00-9:30	Opening Ceremony: Welcome address by the chairs
9:30-10:30	Keynote 1: <i>A Holistic Approach to Automatic Deep Understanding of Technical Documents</i> Dr. Nikolaos Bourbakis , IEEE Fellow, Director, CART-WSU, BAIF <i>Chair: Ioannis Hatzilygeroudis</i>
10:30-11:30	Session O1: Deep Learning (55min) <i>Chair: Konstantinos Blekas</i>
10:30-10:50	<i>Neural Architecture Search with Synchronous Advantage Actor-Critic Methods and Partial Training</i> George Kyriakides and Konstantinos G. Margaritis
10:50-11:10	<i>Convolutional Neural Networks for Toxic Comment Classification</i> Spiros V. Georgakopoulos, Sotiris K. Tasoulis, Aristidis G. Vrahatis and Vassilis P. Plagianakos.
11:10-11:30	<i>Speaker Verification based on extraction of Deep Features (S)</i> Evangelos Mitsianis, Evaggelos Spyrou and Theodore Giannakopoulos
11:30-12:00	Coffee Break
12:00-14:00	Session O2: Data Mining (1h+55min) <i>Chair: Efstathios Stamatatos</i>
12:00-12:20	<i>Fully Unsupervised Convolutional Learning for Fast Image Retrieval</i> Maria Tzelepi and Anastasios Tefas
12:20-12:40	<i>Multiagent Reinforcement Learning Methods to Resolve Demand Capacity Balance Problems</i> Christos Spatharis, Theocharis Kravaris, George Vouros, Konstantinos Blekas, Georgios Chalkiadakis, Jose Manuel Cordero and Esther Calvo Fernandez
12:40-13:00	<i>Recurrent attention for deep neural object detection</i> Georgios Symeonidis and Anastasios Tefas
13:00-13:20	<i>Deep Sparse Autoencoders for Football Match and Bet Prediction</i> Konstantinos Tsampazis and Anastasios Tefas
13:20-13:40	<i>Data-Driven Audio Feature Selection for Audio Quality Recognition in Broadcast News</i> Theodoros Theodorou, Iosif Mporas, Ilyas Potamitis and Nikos Fakotakis
13:40-14:00	<i>A Semi-supervised regressor based on model trees</i> Nikos Fazakis, Stamatis Karlos, Sotiris Kotsiantis and Kyriakos Sgarbas
14:00-15:30	Lunch
15:30-17:30	Session O3: Machine Learning I (2h) <i>Chair: Dimitris Kalles</i>
15:30-15:50	<i>Evaluation of Sensitive Data Hiding Techniques for Transaction Databases</i> Christos Makris and Panagiotis Markovits
15:50-16:10	<i>On Using Linear Diophantine Equations for Efficient Hiding of Decision Tree Rules</i> Georgios Feretzakis, Dimitris Kalles and Vassilios Verykios
16:10-16:30	<i>Generalized Adaptive Possibilistic C-Means Clustering Algorithm</i> Spyridoula Xenaki, Konstantinos Koutroumbas and Athanasios Rontogiannis
16:30-16:50	<i>The Projected Dip-means Clustering Algorithm</i> Theofilos Chamalis and Aristidis Likas
16:50-17:10	<i>Generating Recommendations by Graph Traversal in Social Rating Networks</i> Flora Sakketou, Nicholas Ampazis and Dimosthenis Drivaliaris
17:10-17:30	<i>Several MapReduce Implementations for Privacy Preserving Record Linkage (S)</i> Dimitris Boussis, Elias Dritsas, Andreas Kanavos, Spyros Sioutas and Vassilios Verykios
17:30-18:00	Coffee Break
18:00-19:00	Session O4: Machine Learning II (1h+10min) <i>Chair: Christos Makris</i> Poster Session PS1: <i>Chair: Michael Paraskevas</i>

18:00-18:20	<i>Sliding Window Approach for Online Energy Disaggregation Using Artificial Neural Networks</i> Odysseas Krystalakos, Christoforos Nalmpantis and Dimitris Vrakas	<i>Design of a vision substitution vibrotactile vest for the visually impaired.</i> Dimitris Kalampalikis and Konstantinos Moustakas
18:20-18:40	<i>Identifying Retweetable Tweets with a Personalized Global Classifier</i> Michail Vougioukas, Ion Androutopoulos and Georgios Paliouras	<i>3-Class Prediction of Asthma Control Status Using a Gaussian Mixture Model Approach.</i> Gerasimos Arvanitis, Otilia Kocsis, Aris Lalos, Stavros Nousias, Konstantinos Moustakas and Nikos Fakotakis
18:40-18:50	<i>A Parallel Algorithm for Tracking Dynamic Communities based on Apache Flink (S)</i> Georgios Kechagias, Grigorios Tzortzis, Dimitrios Vogiatzis and Georgios Paliouras	<i>A gaming ecosystem as a tool for research and education in Artificial Intelligence.</i> Kyriakos Giagtzoglou and Dimitris Kalles
18:50-19:00	<i>Deep learned features for image retrieval (S)</i> Evangelos Mitsianis, Evaggelos Spyrou, Theodore Giannakopoulos, Stavros Niafas and Stavros Perantonis	<i>Travel Companion: A mobile system for trip assistance relying on Artificial Intelligence and Augmented Reality.</i> Prodromos Lilitsis, Theodore Patkos, Giorgos Flouris and Dimitris Plexousakis
		<i>Sports and Nutrition Data Science using Gradient Boosting Machines.</i> Antonios Pantazopoulos and Manolis Maragoudakis
		<i>Classification of occluded 2D objects using deep learning of 3D shape surfaces.</i> Vasileios Tzitzilonis, Vassilios Kappatos, Evangelos Dermatas and George Apostolopoulos
		<i>El Greco: a 3d-printed humanoid that anybody can afford.</i> Pavlos Skoupras, Shubham Khandelwal, Jaideep Upadhyay, Konstantinos Paraskevas, Georgios Zervas, Nikolaos Fourtounis, Michail Chartomatsidis, Dimitris Katsios, Georgios Papamichalakis and Ergina Kavallieratou
		<i>Control a robot via internet using a block programming platform for educational purposes</i> Ioanna Bakali, Dimitris Chatzis, Nikolaos Fourtounis, Maria Soulountsi, Nikolaos Mavropoulos, Aristotelis Theodoulidis, Nikolaos Manos, Panagiotis Papanastasiou and Ergina Kavallieratou
19:00-21:00	Welcome Reception	

Tuesday, July, 10th		
9:00-10:00	Keynote 2: Graph degeneracy and applications to social networks and text mining Dr. Michalis Vazirgiannis , Professor at LIX, Ecole Polytechnique in France <i>Chair: Vassilis Megalooikonomou</i>	
10:00-11:00	Session O5: Text Mining and Analysis (70min) <i>Chair: Efstathios Stamatatos</i>	Tutorial " Deep Learning for Computational Biology" Part A: Talk "Deep representation learning for protein analysis, search and design" <i>Tutor: Thrasyvoulos Karydis, MIT Media Lab</i>
10:00-10:20	<i>Intrinsic Author Verification Using Topic Modeling</i> Nektaria Potha and Efstathios Stamatatos	
10:20-10:30	<i>Real Time Location Based Sentiment Analysis on Twitter - The AirSent System (S)</i> Dimitrios Michailidis, Nikolaos Stylianou and Ioannis Vlahavas	
10:30-10:40	<i>Energy profile representation in vector space (S)</i> Christoforos Nalmpantis, Odysseas Krystalakos and Dimitris Vrakas	
10:40-10:50	<i>Energy profile representation in vector space (S)</i> Christoforos Nalmpantis, Odysseas Krystalakos and Dimitris Vrakas	
10:50-11:00	<i>Diversifying Search Engine Results (S)</i> Christos Klavdianos and Christos Makris	
11:00-11:30	Coffee Break	
11:30-13:30	Session O6: Knowledge Representation and Reasoning (1h+55min) <i>Chair: Nick Bassiliades</i>	Tutorial " Deep Learning for Computational Biology" Part B: "Hands-on Deep Learning Tutorial for Computational Biology" <i>Tutor: Thrasyvoulos Karydis, MIT Media Lab</i> 11:30-12:00 Technical Presentation on Deep Learning with Applications in Biology 12:00-12:15 Installation of Jupyter notebooks on participants' laptops 12:15-13:30 Coding session - introduction - language translation - molecular properties prediction - protein properties prediction
11:30-11:50	<i>Towards Multipolicy Argumentation</i> Nick Bassiliades, Nikolaos Spanoudakis and Antonis Kakas	
11:50-12:10	<i>Correlations of Neural Activity with Behavioral Kinematics during Active Tactile Decision Making</i> Ioannis Delis, Jacek Dmochowski, Paul Sajda and Qi Wang	
12:10-12:25	<i>Iterated Belief Revision and Dalal's Operator (S)</i> Theofanis Aravanis, Pavlos Peppas and Mary-Anne Williams	
12:25-12:45	<i>Towards Human Activity Reasoning with Computational Logic and Deep Learning (S)</i> Ioannis Prapas, Georgios Paliouras, Alexandros Artikis and Nicolas Baskiotis	
12:45-13:00	<i>Local weighted Averaged 2-Dependence Estimator(s)</i> Stamatis Karlos, Aikaterini Karanikola, Vangjel Kazllarof and Sotiris Kotsiantis	
13:00-13:15	<i>Composite Event Patterns for Maritime Monitorin(S)</i> Manos Pitsikalis, Ioannis Kontopoulos, Alexander Artikis, Elias Alevizos, Paul Delaunay, Jules-Edouard Pouessel, Richard Dreo, Cyril Ray, Elena Camossi, Anne-Laure Joussemle and Melita Hadzagic	
13:15-13:30	<i>An Aggregation Operator for Evaluating Unbounded Positive Evidence (S)</i> Ilias Kotinas and Fakotakis Nikos	
13:30-15:00	Lunch	
15:00-17:00	Session SS1: Special Session (IBSA) (1h+55min) <i>Chair: Konstantinos Moustakas</i>	
15:00-15:20	<i>Global vs local classification models for multi-sensor data fusion</i> Evangelia Pippa, Evangelia I. Zacharaki, Ahmet Turan Özdemir, Billur Barshan and Vasileios Megalooikonomou	
15:20-15:40	<i>Characterization of whole-body muscle activity during reaching movements using space-by-time modularity and functional similarity analysis</i> Ioannis Delis, Pauline Hilt, Thierry Pozzo, Stefano Panzeri and Bastien Berret	

15:40-16:00	<i>Exploring machine learning for monitoring and predicting severe asthma exacerbations</i> Aggeliki Anastasiou, Otilia Kocsis and Konstantinos Moustakas	
16:00-16:20	<i>Pathway analysis using XGBoost classification in Biomedical Data</i> Georgios Dimitrakopoulos, Aristidis Vrahatis, Vassilis Plagianakos and Kyriakos Sgarbas	
16:20-16:40	<i>Mining Free-Text Medical Notes for Suicide Risk Assessment</i> Marios Adamou, Grigoris Antoniou, Elissavet Greasidou, Vincenzo Lagani, Paulos Charonyktakis and Ioannis Tsamardinos	
16:40-17:00	<i>Towards visualizing primary Sjögren's Syndrome data from heterogeneous cohorts (S)</i> Eleftheria Polychronidou, Ilias Kalamaras, Kostantinos Votis and Dimitrios Tzovaras	
17:00-17:30	Coffee Break	
17:30-18:30	<u>Session O7: Evolutionary and Nature Inspired Methods (1h)</u> <i>Chair: Vassilis Plagianakos</i>	<u>Session O8: Agent-Based Systems (55min)</u> <i>Chair: Stasinou Konstantopoulos</i>
17:30-17:50	<i>A novel Nature Inspired metaheuristic for Optimal Leveling of Resources in Project Management (F)</i> Alexandros Tzanetos, Georgios Dounias, Christos Kyriklidis, Apostolis Dimoulakis and Anastasia Papamichail	<i>Detecting and Measuring Human Walking in Laser Scans (F)</i> Katerina Zamani, Georgios Stavrinou and Stasinou Konstantopoulos
17:50-18:10	<i>Acquisition of approximate throughput formulas for serial production lines with parallel machines using intelligent techniques (F)</i> Konstantinos Boulas, Alexandros Tzanetos and Georgios Dounias	<i>Game theoretic optimal position computation of collaborating agents for visual area coverage (F)</i> Sotiris Papatheodorou, Michalis Smyrnakis, Tembine Hamidou and Anthony Tzes
18:10-18:30	<i>A Hybrid Evolutionary Algorithm for Maximizing Satisfiability in Temporal or Spatial Qualitative Constraints (F)</i> Ali Mensi, Jean-François Condotta, Issam Nouaouri, Michael Sioutis and Lamjed Ben Saïd	<i>DRAMA: An IoT-enabled Distributed Reputation Agent Model</i> Kalliopi Kravari, Maria Ustyantseva and Nick Bassiliades
20:00-23:30	Banquet	

Wednesday, July, 11th	
9:00-10:00	Keynote 3: Deep learning for collaborative control of mobile robots for area coverage Dr. Anthony Tzes , professor, NYU Abu Dhabi Chair: Nikolaos Fakotakis
10:00-11:00	Keynote 4: Time-aware Multi-agent Symbiosis Dr. Panos Trahanias , professor, Department of Computer Science, University of Crete Chair: Konstantinos Spyropoulos
11:00-11:30 Coffee Break	
11:30-13:30	Session SS2: Special Session (NLP4SMA) 1,5 Chair: Iosif Mporas & Vasiliki Simaki
11:30-11:50	<i>Controversy and Sentiment: An Exploratory Study</i> Christopher Leberknight, Kateryna Kaplun and Anna Feldman
11:50-12:10	<i>Detection of Stance-related Characteristics in Social Media Text</i> Vasiliki Simaki, Panagiotis Simakis, Carita Paradis and Andreas Kerren
12:10-12:30	<i>Text analysis for decision making under adversarial environments</i> Ilias Kotinas and Nikos Fakotakis
12:30-12:50	<i>WAMBy: An information retrieval approach to web-based question answering</i> Christos Samarinas and Grigorios Tsoumakas
12:50-13:10	<i>Detecting Censorable Content on SinaWeibo: A Pilot Study (S)</i> Kei Yin Ng, Anna Feldman and Christopher Leberknight
13:10-13:30	<i>Evaluation of an Educational Training Platform Using Text Mining (S)</i> Nikolaos Spatiotis, Isidoros Perikos, Iosif Mporas and Michael Paraskevas
13:30-15:00 Lunch	
15:00-16:00	Session SS3: Special Session (QAI) (50min) Chair: Kyriakos Sgarbas
15:00-15:20	<i>Application of Quantum Gradient Descent as a Learning Algorithm for Factorization Machine</i> Narges Alavi Samani and Hossein Aghababa
15:20-15:40	<i>Improving the Sequence Alignment Method by Quantum Multi-Pattern Recognition (S)</i> Konstantinos Prousalis and Nikos Konofaos
15:40-16:00	<i>Knock Detection Improvement Applying Quantum Signal Processing Method in Automotive System (S)</i> Amirhossein Moshrefi, Narges Alavi and Hossein Aghababa
16:00-16:30 Coffee Break	
16:30-17:00 Awards	
17:00-18:00 EETN General Assembly - SETN conclusion by the chairs	
Thursday, July, 12th	
09:00-15:00	Tour

Venue

The Venue of SETN2018 will be the Conference and Cultural Centre of the University of Patras, which is located inside the university campus.

Social Events

Welcome reception

Registered participants (Authors and Regular Participants) of the SETN 2018 conference are invited to join the Welcome Reception that will be held at the Conference and Cultural Centre of the University of Patras on Monday 9 July 2018. The Welcome Reception is included in the registration fee.

Gala dinner

Authors and Regular registered participants of the conference are welcome to participate in the Gala dinner that will be held on Tuesday 10 July 2018 at the Parko Eirinis of the University of Patras. The Gala ticket dinner is included in the registration fee.

Ancient Olympia tour

Full registered participants of the conference are invited to join the Ancient Olympia tour that will be held on Thursday 12 July 2018 and will take place on condition that there is participation. The Olympia city tour ticket is not included in the registration fee.

SETN History

SETN2018 – Patras (10th)
SETN2016 – Thessaloniki (9th)
SETN2014 – Ioannina (8th)
SETN2012 – Lamia (7th)
SETN2010 – Athens (6th)
SETN2008 – Syros (5th)
SETN2006 – Heraklion (4th)
SETN2004 – Samos (3rd)
SETN2002 – Thessaloniki (2nd)

Notes:

Sponsors:



Supporters:

